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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,682	03/29/2005	Hanns-Ingo Maack	DE 020218	1726
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EXAMINER				
PATEL, JAYESH A				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,682

Applicant(s)

MAACK, HANNS-INGO

Examiner

JAYESH A. PATEL

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 08/16/2007
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. The application is not properly formatted. Please follow the below guidelines in framing the application.

The following guidelines illustrate the preferred layout and content of patent applications filed under 35 U.S.C. 111(a). These guidelines are suggested for the applicant's use. See also 37 CFR 1.77 and MPEP § 608.01(a). If an application data sheet (37 CFR 1.76) is used, data supplied in the application data sheet need not be provided elsewhere in the application except that the citizenship of each inventor must be provided in the oath or declaration under 37 CFR 1.63 even if this information is provided in the application data sheet (see 37 CFR 1.76(b)). If there is a discrepancy between the information submitted in an application data sheet and the information submitted elsewhere in the application, the application data sheet will control except for the naming of the inventors and the citizenship of the inventors. See MPEP § 601.05.

A complete application filed under 35 U.S.C. 111(a) comprises a specification, including claims, as prescribed by 35 U.S.C. 112, drawings as prescribed by 35 U.S.C. 113, an oath or declaration as prescribed by 35 U.S.C. 115, and the prescribed filing fee<, search fee, examination fee and application size fee<.

Arrangement and Contents of the Specification

The following order of arrangement is preferable in framing the specification. See also MPEP § 608.01(a). Each of the lettered items should appear in upper case, without underlining or bold type, as section headings.

- (A) Title of the invention. (See MPEP § 606).
- (B) Cross-reference to related applications. (See MPEP § 201.11).
- (C) Statement regarding federally sponsored research or development. (See MPEP § 310).
- (D) > The names of the parties to a joint research agreement (see 37 CFR 1.71(g)).
- (E) < Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc and an incorporation-by-reference of the material on the compact disc. For computer listings filed on or prior to March 1, 2001, reference to a "Microfiche appendix" (see former 37 CFR 1.96(c) for Microfiche appendix).

(F) < Background of the invention. (See MPEP § 608.01(c)).

(1) Field of the invention.

(2) Description of related art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98.

*>

(G) < Brief summary of the invention. (See MPEP § 608.01(d)).

*>

(H) < Brief description of the several views of the drawing. (See MPEP § 608.01(f)).

*>

(I) < Detailed description of the invention. (See MPEP § 608.01(g)).

*>

(J) < Claim(s) (commencing on a separate sheet). (See MPEP § 608.01(i)-(p)).

*>

(K) < Abstract of the Disclosure (commencing on a separate sheet). (See MPEP § 608.01(b)).

*>

The contents of the specification or disclosure are not properly arranged and labeled. Appropriate correction is required.

Claim Objections

Claims 2-8 are objected to because of the following informalities: Claims 2-8 recite "A method" should be replaced with "The method". Appropriate correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features in Claim 10 ("X-ray apparatus with an adjustable diaphragm arrangement in the beam path" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Chan (US 6355420) hereafter Chan.

1. Regarding Claim 1, Chan discloses a method (**Col 36 Lines 40- through Col 37 Lines 17**) of operating an imaging device (**CCD cameras**) with a two-dimensional field of image sensors (**Col 36 Lines 45-47**) as well as an evaluation unit which is capable of reading out and processing the pixel signals (**Col 36 Lines 53 and 66 where a faster rate of read out is done**), representing output signals of image sensors combined by a binning operation (**Col 36 Lines 62-63 where the binning takes place to modify the pixels**), at a maximum rate (**higher frame rate of 16 times the frame rate of 100 frames /second at Col 37 Lines 4-9**) of no more than G.sub.max (**16 times the rate at Col 37 Lines 14**), in which method at least one parameter is preset in order to define a sub-region of the field (**100X100 in a 1024X1024 pixel CCD detector at Col 37 Line 3**), any remaining parameters for defining the sub-region as well as the binning factor b (**Binned 4X4 region at Col 37 Lines 12**) and the imaging rate f (**16 times the rate at Col 37 Lines 14**) are defined in such a manner that the

maximum rate $G_{sub,max}$ of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region as seen in **(Col 36 Lines 40- through Col 37 Lines 17)**.

4. Regarding Claim 4, Chan disclose the method as claimed in claim 1. Chan further disclose the device characterized in that the sub-region is preset **(4X4 subregion at Col 37 Lines 12)** in the service mode of the imaging device.

5. Regarding Claim 5, Chan discloses the method as claimed in claim 1. Chan further disclose characterized in that there are specified rules in conformity with which variables are changed relative to their current values in order to ensure that the maximum rate $G_{sub,max}$ is adhered to at **(Col 37 Lines 1-17)**. Chan disclose that smaller desired regions allow for higher frame rates. Chan further disclose that for instance 100X100 pixel in a 1024X1024 pixel CCD may be read at a frame rate of 100 frames/sec at a pixel read frequency of 1 MHZ. A 1024X1024 pixel CCD binned 4X4 yields a 256X256 image which has large pixels that are effectively 16 times larger than the unbinned version and the image is read out at 16 times the rate. Chan further disclose that the operational mode of the CCD is dictated **(setting the rules for the binning and the frame rate)** by the components of the camera and the computer.

9. Claim 9 is a corresponding Imaging device claim of Claim 1. See the explanation of Claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Hoffman et al. (EP 1089555A1) hereafter Hoffman.

2. Regarding Claim 2, Chan discloses the method as claimed in claim 1. Chan discloses two-dimensional arrangements of the pixels in **(Col 36 Lines 40- through Col 37 Lines 17)**. Chan is silent and however does not disclose characterized in that the image sensors are arranged in a periodic pattern in a rectangular field, the sub-region having a rectangular shape with its sides extending parallel to the edges of the field.

Hoffman disclose characterized in that the image sensors are arranged in a periodic pattern in a rectangular field **(Fig 3 periodic pattern of region 104 in region 102)**, the sub-region having a rectangular shape with its sides extending parallel to the edges of the field **(detector array 100 is divided in to sub regions in which the blocking pattern looks like the sides or (boundaries)**

of the blocks are parallel to both the edges of detector 100). Hoffman disclose that the present invention recognizes the segmenting (binning) the detector array in to the regions provides a versatile and more useful system at **(Col 2 Lines 53-57)**. Hoffman further discloses that the detector can be programmed to enable different scan rates in each region to enable different resolutions in each region and to reduce the production of unnecessary data at **(Col 2 lines 22-25)**. Chan also disclose the method of processing the pixels in which the advantage of defining the regions of interest is that it allows faster image read out to occur at **(Col 36 Lines 65-66)**. Hoffman and Chan are from the same field of endeavor and are analogous in the field of image processing , therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Hoffman in the method of Chan for the above reasons.

3. Regarding Claim 3, Chan disclose the method as claimed in claim 1. Chan discloses the imaging device useful for detecting signals in a two dimensional fluorescence imaging system which detects electromagnetic radiation in the fluorescent wavelength range at **(Col 36 Lines 4-7)** however is silent and does not disclose X-ray detector. Hoffman further disclose characterized in that the image sensors are X-ray sensors at **(Fig 3 and at Col 2 Lines 57-58)**.

10. Regarding Claim 10, Chan discloses an imaging device as claimed in claim 9. Chan is silent and however does not disclose characterized in that it comprises an X-ray apparatus with an adjustable diaphragm arrangement in the beam path, at least one adjustment parameter of the diaphragm device being presettable while any remaining adjustment parameters are automatically set.

Hoffman disclose an X-ray apparatus as in Fig 4 and the detector in fig 3.

Claims 6 -8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wischmann et al (US 6854885) hereafter Wischmann.

6. Regarding Claim 6, Chan disclose the method as claimed in claim 1. Chan discloses that the CCD array is evaluated in smaller sub regions for higher frame rates at **(Col 37 Line 1)**. Chan is silent and however does not disclose characterized in that the evaluation of the pixel signals is performed by means of calibration images related to the sub-region.

Wischmann disclose characterized in that the evaluation of the pixel signals is performed by means of calibration images related to the sub-region at **(Col 1 Lines 44- 49 and Col 4 Lines 1-36)**. Wischmann disclose that the processing unit (with calibration measurements) removes differences between the channels and thus higher degree of corrected images can be obtained at **(Col 4 Lines 20-29)**. Wischmann and Chan are from the same field of endeavour (image processing) therefore it would have been obvious for one of ordinary skill

in the art at the time the invention was made to have used the teachings of Weischmann in the CCD image processor of the Chan for the above reasons.

7. Regarding Claim 7, See the explanation of Claim 6. Wischmann further disclose where the calibration images are generated for the X-ray detector in order to generate a corrected image and also at **(Col 2 Lines 49-57)**.

8. Regarding Claim 8, Chan and Wischmann disclose the method as claimed in claim 6. Wischmann further disclose characterized in that dark images of the sub-region are generated and used as calibration images at **(Col 1 Lines 44-46)**. Wischmann also disclose the zero radiation image for each sensor **(dark image fro each sensor)** at Col 2 Lines 49-50.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAYESH A. PATEL whose telephone number is (571)270-1227. The examiner can normally be reached on M-F 7.00am to 4.30 pm (5-4-9). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jayesh A Patel/
Examiner, Art Unit 2624

/J. W./
Supervisory Patent Examiner, Art Unit 2624